

North America Historical Climate, Current Status and Comments

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Historical (documentary) climatic reconstructions provide a longer perspective of climatic variability at decadal and interannual timescales well before the temporal coverage of modern (twentieth century) instrumental records and provide a means of verification for paleoclimatic proxy data. Progress in North America, however, currently lags much behind similar research done in Europe and other areas around the world. We provide a North American perspective of historical climatic research. Selection of sites for constructing long time series is important in understanding past climatic response to teleconnections, such as ENSO, the NAO, and the PDO, as well as decadal and centennial climatic trends. Different fixed observation times, different practices of weather instrument exposures, and assessing qualitative weather information through historical methods are the main issues in applying corrections and conducting proper climatic interpretations. Daily descriptive and instrumental data are used to complement each other and increase confidence in the data. We describe these issues using examples from our current databases, with sites scattered over North America that include daily reconstructed temperature and precipitation time-series, precipitation frequency reconstructions, growing season and freeze/thaw reconstructions, tropical cyclone reconstructions, and case studies of extreme events. We further demonstrate examples on applying historical climate reconstructions to assessing historical climatic impacts on society. Community participation and web-based volunteer efforts are also being employed to digitize and eventually archive historical weather and climate information.

